IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Dario Norberto R. CARRARA et al.	Confirmation No.: 5121
Application No.: 10/798,161	Patent No.: 7,198,801 B2
Filing Date: March 10, 2004	Patent Date: April 3, 2007
For: FORMULATIONS FOR TRANSDERMAL OR TRANSMUCOSAL APPLICATION	Attorney Docket No.: 88066-8099

REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 C.F.R. § 1.323

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Patentees hereby respectfully request the issuance of a Certificate of Correction in connection with the above-identified patent. The corrections are listed on the attached Form PTO-1050. The corrections requested are as follows:

On the title page, Item (63), "Related Application Data", after "Aug. 3, 2001", delete ", said application No. 10/798,161". This change is requested to correct a clerical error that appears to have been made by the Office.

At column 34, line 55 (claim 21, line 17), after "fatty alcohols, long-chain fatty acids, and long-chain fatty", insert -- esters --. This change is requested to correct an inadvertent clerical error in preparing application claim 21. Support for this change can be found in claim 1.

The requested changes are to correct errors of a clerical or typographical nature and do not involve changes that would constitute new matter or require reexamination.

A fee of $100 is believed to be due for this request. Please charge the required fees to Winston & Strawn LLP Deposit Account No. 50-1814. Please issue a Certificate of Correction in due course.

Respectfully submitted,

5/10/07
Date

Allan A. Fanucci (Reg. No. 30,256)

WINSTON & STRAWN LLP
Customer No. 28765

212-294-3311

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO.: 7,198,801 B2
APPLICATION NO.: 10/798,161
DATED: April 3, 2007
INVENTOR(S): Carrara et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title Page:
Item (63), "Related Application Data", after "Aug. 3, 2001", delete ", said application No. 10/798,161".

Column 34:
Line 55 (claim 21, line 17), after "fatty alcohols, long-chain fatty acids, and long-chain fatty", insert -- esters --.

WINSTON & STRAWN LLP
Patent Department
1700 K Street, N.W.
Washington, D.C. 20006-3817

US007198801B2

(12) **United States Patent**
Carrara et al.

(10) **Patent No.: US 7,198,801 B2**
(45) **Date of Patent: *Apr. 3, 2007**

(54) **FORMULATIONS FOR TRANSDERMAL OR TRANSMUCOSAL APPLICATION**

(75) Inventors: **Dario Norberto R. Carrara**, Oberwil (CH); **Arnaud Grenier**, Steinbrunn le Haut (FR); **Celine Besse**, Saint Louis (FR); **Stephen M. Simes**, Long Grove, IL (US); **Leah M. Lehman**, Green Oaks, IL (US)

(73) Assignee: **Antares Pharma IPL AG**, Zug (CH)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 326 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **10/798,161**

(22) Filed: **Mar. 10, 2004**

(65) **Prior Publication Data**

US 2004/0219197 A1 Nov. 4, 2004

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/343,570, filed as application No. PCT/EP01/09007 on Aug. 3, 2001, ~~said application No. 10/798,161~~.

(60) Provisional application No. 60/510,613, filed on Oct. 10, 2003, provisional application No. 60/453,604, filed on Mar. 11, 2003.

(30) **Foreign Application Priority Data**

Aug. 3, 2000 (EP) PCT/EP00/07533

(51) **Int. Cl.**

A61F 13/00	(2006.01)
A61K 9/70	(2006.01)
A61K 31/56	(2006.01)
A01N 45/00	(2006.01)

(52) **U.S. Cl.** **424/449**; 514/169

(58) **Field of Classification Search** 424/448, 424/449; 514/169

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,082,881	A	4/1978	Chen et al.	424/241
4,315,925	A	2/1982	Hussaiin et al.	424/239
4,383,993	A	5/1983	Hussaiin et al.	424/239
4,390,532	A	6/1983	Stuttgen et al.	424/240
4,537,776	A	8/1985	Cooper	514/424
4,863,970	A	9/1989	Patel et al.	514/784
4,952,560	A	8/1990	Kigasawa et al.	514/2
5,071,657	A	12/1991	Oloff et al.	424/486
5,128,138	A	7/1992	Blank	424/449
5,178,879	A	1/1993	Adekunle et al.	424/484
5,232,703	A	8/1993	Blank	424/449
5,238,933	A	8/1993	Catz et al.	514/236.2

(Continued)

FOREIGN PATENT DOCUMENTS

EP	0 249 397	12/1987

(Continued)

OTHER PUBLICATIONS

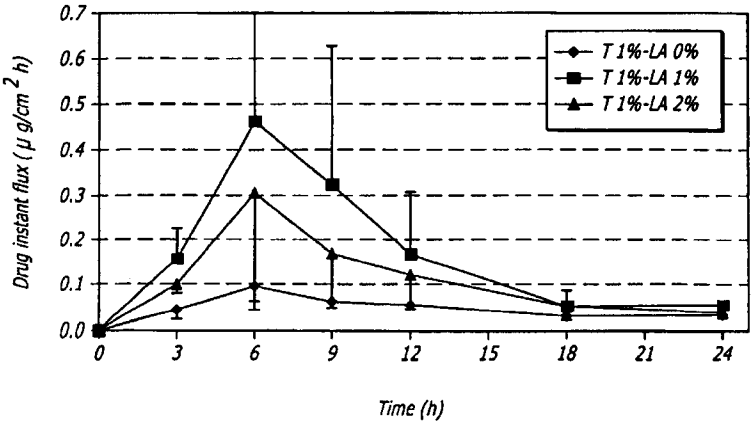
US 6,214,374, 04/2001, Schmirier et al. (withdrawn)

Primary Examiner—Sreeni Padmanabhan
Assistant Examiner—Konata M. George
(74) *Attorney, Agent, or Firm*—Winston & Strawn LLP

(57) **ABSTRACT**

The present invention relates generally to formulations for transdermal or transmucosal administration of an active agent. The invention is a substantially malodorous-free and irritation free transdermal formulation which is substantially free of long chain fatty alcohols, long-chain fatty acids, and long-chain fatty esters.

28 Claims, 11 Drawing Sheets



Any equivalent embodiments are intended to be within the scope of the invention. Indeed, various modifications of the invention in addition to those shown and described herein will become apparent to those skilled in the art from the foregoing description. Such modifications are also intended to fall within the scope of the appended claims.

What is claimed is:

1. A formulation for transdermal or transmucosal administration of an active agent, the formulation comprising: at least one active agent, provided that when the active agent is estrogen, a progestin is not present in the formulation, and when the active agent is progestin, estrogen is not present in the formulation; and a delivery vehicle comprising a C_2 to C_4 alkanol, a polyalcohol, and a permeation enhancer of monoalkyl ether of diethylene glycol present in an amount sufficient to provide permeation enhancement of the active agent through dermal or mucosal surfaces; wherein the formulation is substantially free of long-chain fatty alcohols, long-chain fatty acids, and long-chain fatty esters in order to avoid undesirable odor and irritation effects caused by such compounds during use of the formulation.

2. The formulation of claim **1**, wherein the polyalcohol is present in an amount between about 1% and 30% of the vehicle; and the permeation enhancer is present in an amount of between about 0.2% and 25% of the vehicle.

3. The formulation of claim **1**, wherein the active agent is testosterone present in an amount between about 0.05% to 10% of the formulation; the alkanol is present in an amount between about 20 to 65% of the formulation; the polyalcohol is propylene glycol present in an amount between about 1% to 15% of the formulation; the permeation enhancer is diethylene glycol monoethyl ether present in an amount between about 1% to 15% of the formulation, and further wherein the formulation comprises a gelling agent present in an amount of between 0.05% to about 4% of the formulation, a neutralizing agent present in an amount between about 0.05% and 1% of the formulation, and water present in an amount between about 20% to 65% of the formulation.

4. The formulation of claim **3**, wherein the formulation further includes a sequestering agent.

5. The formulation of claim **1**, wherein the polyalcohol and permeation enhancer are present in a weight ratio of 2:1 to 1:1.

6. The formulation of claim **1**, wherein the polyalcohol and permeation enhancer are present in a weight ratio of 1.25:1 to 1.2:1.

7. The formulation of claim **1**, wherein the alkanol is present in an amount of 5 to 75% by weight of the vehicle.

8. The formulation of claim **1**, wherein the alkanol is selected from the group consisting of ethanol, isopropanol and n-propanol.

9. The formulation of claim **1**, wherein the polyalcohol is polypropylene glycol.

10. The formulation of claim **1** wherein the active agent is selected from the group including androgens, estrogens, or progestogens or any combination thereof.

11. The formulation of claim **1**, wherein the active agent is selected from the group consisting of androgens, anti-androgens, estrogens, anti-estrogens, progestogens, anti-progestogens, adrenergic agonists, analgesics, sedatives, amides, arylpiperazines, nerve agents, antineoplastics, anti-inflammatory agents, anticholinergics, anticonvulsants, anti-depressants, antiepileptics, antihistaminics, antihypertensives, muscle relaxants, diuretics, bronchodilators, and glucocorticoids.

12. The formulation of claim **1**, wherein the at least one active agent is in combination with a secondary active agent for concurrent administration.

13. The formulation of claim **12**, wherein the at least one or secondary active agent is a combination of methyltestosterone and esterified estrogen.

14. The formulation of claim **12**, wherein the at least one or secondary active agent is a combination of testosterone and nandrolone decanoate.

15. The formulation of claim **12**, wherein the at least one or secondary active agent is a combination of testosterone and estradiol.

16. The formulation of claim **1**, wherein the formulation further comprises at least one of a gelling agent, neutralizing agent, sequestering agent, buffering agent, moisturizing agent, humectant, surfactant, antioxidant, emollient, or buffer.

17. The formulation of claim **16**, wherein the gelling agent is selected from the group consisting of carbomer, carboxyethylene, polyacrylic acid, cellulose derivatives, ethylcellulose, hydroxypropylmethylcellulose, ethylhydrooxyethylcellulose, carboxymethylcellulose, hydroxypropylcellulose, hydroxyethylcellulose, natural gums, arabic, xanthan, guar gums, alginates, polyvinylpyrrolidone derivatives, polyoxyethylene polyoxypropylene copolymers, chitosan, polyvinyl alcohol, pectin, and veegum.

18. The formulation of claim **16**, wherein the buffering agent is selected from the group consisting of carbonate buffers, citrate buffers, phosphate buffers, acetate buffers, hydrochloric acid, lactic acid, tartric acid, diethylamine, triethylamine, diisopropylamine, tetrahydroxypropylethylendiamine, and aminomethylamine.

19. The formulation of claim **16**, wherein the sequestering agent is edetic acid.

20. The formulation of claim **1** wherein the formulation is in the form of a gel, lotion, cream, spray, aerosol, ointment, emulsion, suspension, liposomal system, lacquer, patch, bandage, or occlusive dressing.

21. A formulation for transdermal or transmucosal administration of an active agent, the formulation comprising: at least one active agent, provided that when the active agent is estrogen, a progestin is not present in the formulation, and when the active agent is progestin, estrogen is not present in the formulation; and a delivery vehicle comprising a C_2 to C_4 alkanol, a polyalcohol, and a permeation enhancer of monoalkyl ether of diethylene glycol to provide permeation enhancement of the active agent through dermal or mucosal surfaces, wherein the polyalcohol is propylene glycol and is present in an amount between about 1% and 30% of the vehicle, the permeation enhancer is diethylene glycol monoethyl ether and is present in an amount of between about 0.2% and 25% of the vehicle, the alkanol is ethanol and is present in an amount of 5 to 75% by weight of the vehicle wherein the formulation is substantially free of long-chain fatty alcohols, long-chain fatty acids, and long-chain fatty esters in order to avoid undesirable odor and irritation effects caused by such compounds during use of the formulation.

22. The formulation of claim **21**, wherein the polyalcohol and permeation enhancer are present in a weight ratio of 2:1 to 1:1.

23. The formulation of claim **1** wherein the formulation comprises at least one of a gelling agent, neutralizing agent, sequestering agent, buffering agent, moisturizing agent, humectant, surfactant, antioxidant, emollient, or buffer and is in the form of a gel, lotion, cream, spray, aerosol, ointment, emulsion, suspension, liposomal system, lacquer, patch, bandage, or occlusive dressing.